

Building (cont. from pg. 9)

"The staff knew how to operate the building when we took possession," said Richard Siegle, museum facilities services director. "Proper training, building documents, and involvement throughout the design and commissioning phases of the project enabled the two person maintenance staff to bring this complex building back into operation after a major power outage without calling the mechanical contractor."

From a building operation standpoint, this project was a success. However, from an energy standpoint it was less than satisfying. Museum officials are concerned with the building's high-energy bills. So, if the commissioning of the building was a success, why is the energy consumption so high? Because, energy optimization was not part of the initial design; maintaining the building's environmental conditions was the only consideration. It is not too late to affect the energy usage!

"With the trend log capabilities of the building monitoring system, the operation of the building can be evaluated and energy saved," Storset said. "The museum also has a high outside air load and an air-to-air heat recovery system is another option to reduce energy consumption."

What has been learned from the building commissioning process for the state museum? 1) For building commissioning to successfully impact the building operating conditions, start it at the very beginning of the design process. 2) Include energy optimization in the design intent. 3) Commissioning does not end with the owner accepting the

building, but should continue through the first couple of years of occupancy so the building can be fine-tuned. 4) Build enough time into the construction schedule to perform proper commissioning. 5) Carefully define the systems that need to be commissioned.

"Not every sprinkler head needs to be checked, but the overall fire suppression system should be commissioned," said Storset. "Don't duplicate efforts. If system components are being checked by a code official, then the commissioning agent should only look at the overall system."

The building commissioning process at the Washington State History Museum was – in the final analysis – a success. It identified problems that otherwise may not have been discovered. It provided training to the building operators, good operation and maintenance manuals, resulting in a building that operates as designed. The process could have been improved, certainly. By learning from the commissioning process used for this building, we can make future buildings more energy-efficient. We can impact the design intent by bringing the commissioning agent in earlier. We can make sure that energy, maintenance and other long-term cost considerations are included in the design and save the taxpayers their hard-earned dollars.

Roger Wigfield is an Energy Engineer in the Division of Engineering and Architectural Services, Washington State Department of General Administration, and a frequent contributor to Shop Talk.

Liability (cont. from pg. 11)

becomes the contractor's, as long as the owner has minimal involvement in the work.

"The contract requires the contractor to comply with workplace safety," Ms Combo said. "Enforce your contract and stop the work until the contract conditions are met."

Mr. Wood added that if an owner is in active control over the job site, then the owner is acting as the primary contractor and could be liable, but this is not common in public contracts. He strongly suggested that owners address the situation from Ms. Combo's perspective or ask for assistance from L&I.

Mr. Ragsdale outlined the EPA programs for monitoring, record keeping, and compliance. He emphasized the responsible party for compliance is the permit holder, not the person who conducts the day to day operations.

Other questions posed by attendees included background checks for contractors and subcontractors working on school grounds during school hours, defining the "one man shop" as an independent contractor or personal laborer, lead in drinking water, MSDS sheets, and fluorescent tube disposal.

The Plant Operations Video Tape library now has copies of the Facility Manager Liability and Compliance videoconference for checkout by members. Contact kpurtee@ga.wa.gov or call Karen Purtee at (360) 902-7194.

The next professional development opportunity videoconference is slated for Thursday, October 1, 1998 and is titled Facility Manager Training and Certification.

Have you subscribed to the Plant Operations Network list-server?

It's free and provides timely, informative discussions on facility-related issues. Visit our web site at www.ga.wa.gov/plant/operlist.htm

and follow the prompts!



Shop Talk is a quarterly publication of the Plant Operations Support program. The newsletter is intended to be an informative and operationally-oriented medium for public facilities managers. Contents herein are also available on the program's web site at www.ga.wa.gov/plant/plantops.htm

We welcome feedback on the newsletter's contents and input from readers. We reserve the right to edit correspondence to conform to space limitations. Bob MacKenzie is program manager and editor (360) 902-7257 or e-mail bmacken@ga.wa.gov. Karen Purtee serves as editorial assistant. Plant Operations Support does not make warranty or representation, either expressed or implied, with respect to accuracy, completeness or utility of the information contained herein. Plant Operations Support assumes no liability of any kind whatsoever resulting from the use of, or reliance upon, any information contained in this newsletter.

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Volume 2, No. 4

Plant Operations Support Program

Spring 1998

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A Quest for Quality Maintenance Management

Department of Social and Health Services validates assessment, selection process

By Bob MacKenzie

The Arthurian knights' legendary quest might pale in comparison to a modern day search for the ultimate computerized maintenance management system (CMMS). Thomas Publishing Company's 1997 *CMMS Directory and Comparison Guide* lists some 204 separate software packages dedicated to facilities maintenance and asset management. Compounding facility managers' confusion, besides the sheer number of systems on the market, are the varied functions touted by well-toned marketers and high-end, power-packed demonstrators. Many Plant Operations Support consortium members face a daunting task as their organizations approach the new millenium and are forced to do "more with less."



John Reynolds, Director of Lands and Buildings Division in the Department of Social and Health Services, charged his staff in July 1997 with finding a full capability, user friendly replacement for the department's aging FM-1 system. The mission proved to be something akin to a quest for the "Grail" of CMMS, especially considering the system would serve the department's 15 major institutions in Washington State.

"The need for a fully-functioning, automated facility management system was never in question," said Reynolds. "The challenge was to solicit input from the field, heed the advice of plant managers that will use the system, assemble a top-notch assessment task force, and put every candidate system through a tough evaluation process – all in a finite period of time, with limited financial resources."



Mark Crossen

Mark Crossen was chosen to serve as "lead" for the arduous process, and would double as the division's first information services manager. Crossen's background in construction, maintenance and automation systems, as well as fiscal and property management credentials, made him an ideal choice.

"It was quickly obvious that we had a real tough job ahead of us," said Crossen. "The only way we were going to be successful was to incorporate the users' needs into a select list of criteria, implement a comprehensive assessment process and validate a vendor's claims of system performance and capability."

Please see Quest, page 6.

POS Notes

Bob MacKenzie, Manager



New members continue to join your consortium and they come bearing gifts of experience and resources for collective use. You might be interested to know that more than 121 requests for assistance during the past quarter were resolved with the help of consortium members. Members helping members – what a concept!

We welcome the State Department of Health to the POS consortium. Their membership adds depth and wonderful expertise to our group of facility managers and associated fields. The department's program staff regulate and assist many facility-related areas. We had welcomed the Department of Ecology last quarter, and its positive presence in the consortium is already worthy of note. **Tom Eaton's** help with last month's videoconference and **Carol Fleskes'** support are really appreciated. Welcome also to Oregon's Department of Administrative Services. **Mike Marsh's** staff maintain our sister state's Capitol Campus in Salem and join the POS consortium as both benefactor and beneficiary.

The facilities professionals of the combined Cascadia Community College and UW-Bothell campus have also joined the consortium and we warmly greet them. Welcome aboard to Renton School District and **Joe**

Lamborn's operations group. The State Department of Veterans Affairs rejoined our family after a brief hiatus – welcome home! The Ports of Anacortes and Sunnyside have also re-subscribed to the consortium and we're glad they've opted to remain. **Bob Elsner** and **Susan Herrick** at Anacortes, and **Bob Farrell** and **M'Liss Bierlink** at Sunnyside have been critical to program successes. **Chet Higgins** heads the Lewis County Division of Facility Management and recently re-subscribed to the POS family. We thank Lewis County for their continued support.

Kudos to **John Lindstrom** and **Bob Green** of the Military Department and the professionals of the Washington National Guard for their help on transporting rail ties to a number of POS members. Catch the story on page 4. "Ya done good" to our colleagues at Department of Transportation for their pro-active approach to the Year 2000 issue and for premiering their **Facilities Office Newsletter**. **Fred DeBolt**, **Ron Sisson**, **Ron Niemi** and **Lee Knawa** certainly do WSDOT proud. Labor and Industries also premiered an excellent publication from the Chief Electrical Inspector's office, **Electrical Currents**. **Janet Lewis**, chief electrical inspector, joined L&I colleagues **Michael Wood** and **Kevin Morris** to serve as panelists during the March 25th videoconference. Catch the full story on page 11. **Harry Skinner** at Whatcom County facilities office, **Paul George** at State Parks and Recreation Commission, **Tim Arnold** at GA, **Bob Sanchez** of DSHS's Echo Glen, and **Joe Sullivan** at Washington State Patrol deserve our commendations. Congratulations and farewell to **Mark Crossen**, DSHS Capital Facilities, as he accepts a new position with the State Administrator for the Courts, and to **Sally Hunter** as she takes over the budget office at Washington State Patrol.

The facility pros at the Washington Correction Center in Shelton are testing out a plastic repair system that promises to save us big bucks. Thanks to **Charlie Hicks, Sr.**, **Norm Pacholke** and Associate Superintendent **Gary Jones** for their hands-on support and willingness to share their results with the consortium. **Joe Waiblinger** at the Washington State Penitentiary and his crew provided wonderful insight into new areas of POS support.

Jim Smith at Clallum Bay, **Jim Tooley** at Larch Corrections and **Steve Judy** at Monroe deserve thanks for their willingness to share lessons-learned and other assistance. Finally, "welcome aboard" to **Bill Phillips**, new Assistant Director of the Department of Corrections Office of Capital Programs, Budget and Facility Management.

At press time we had returned from British Columbia following that province's invitation to discuss possible membership in the consortium. **Michael Litton** of the province's Ministry of Education, Skills and Training deserves praise for enhancing international relations and tackling red tape to "make it happen." Officials from the Ministry of Attorney General and two B.C. school districts have requested membership materials. British Columbia facility professionals will add tremendous depth to the POS family and we are truly gratified! A regional consortium is a win-win for everyone. Look for more specifics about our Canadian partners in summer **Shop Talk**.

I'll be representing the consortium at the annual conference of the National Association of State Facilities Administrators in Phoenix in June. Please let me know your areas of interest and concerns, so I can maximize my time in that desert wasteland. Catch my report on the conference in fall's **Shop Talk**.

We're averaging around seven to eight requests for assistance per day and trying hard to stay ahead. Thanks to all those who have responded to my referrals and information requests. You have made the consortium an operationally useful program and allow me time to see my family on weekends! "Till next issue, my very best, with thanks for **"Maintaining your State of Excellence."**

Bob

Facility Manager Liability

If I make a mistake, will they come after my estate?

By Karen Purtee, **Shop Talk** editorial assistant



Two hours weren't enough to cover the broad area of regulations, compliance and liability issues for facility managers during a videoconference on March 19, 1998. Plant Operations Support manager Bob MacKenzie assembled six experts as panelists at the Washington Interactive Technology (WIT) studio in Lacey to form the centerpiece of a videoconference titled **Facility Manager Liability and Compliance**. The panelists presented and interacted with more than 135 facilities professionals who attending the conference at nine WIT sites around Washington.

"We get a rainbow of questions about varying regulations and know how hard facility managers around the state are attempting to meet the letter of all the laws," said Mr. MacKenzie. "I tried to make the forum an expansive landscape so that no matter how diverse the question, we would be able to get an answer from a 'buck-stops-here' person."

With that in mind, the audience was introduced to three top specialists from the Department of Labor and Industries (L&I): Kevin Morris, Plumbing and Contractor Registration programs, Janet Lewis, the state's Chief Electrical Inspector, and Michael Wood, WISHA senior program manager. With them were Mary Ellen Combo, Senior Counsel of the Attorney General's Office, Tom Eaton, Special Projects manager for the Department of Ecology, and David Ragsdale, from the Federal Environmental Protection Agency (EPA). Each made a brief presentation about their area of expertise and how their programs were

designed to help.

Some of the most useful information came in the form of reference for future questions. Websites for the state agencies include <http://www.wa.gov/L&I> (Labor and Industries) and <http://www.wa.gov/ecology> (Department of Ecology). The Ecology page provides links to "publications" and provisions for orders for specific materials. With the link At your service, key telephone numbers for each regional office are listed. **EPA's Region 10 inquiry number 1-800-424-4EPA.**

Audience questions were highlight and candidly addressed by panelists and fellow participants. It appeared attendees were more comfortable with the videoconferencing medium than during previous ones. Several presenters offered solutions if questions affected more than one area of compliance. The questions ran from A-Asbestos to just short of Z with Y-yearly electrical permits.

"WISHA programs are not just enforcement," said Michael Wood, senior program manager. "Consultation staff are available to provide free inspections with the only requirement being that any hazard to worker or public safety discovered during the inspection must be fixed." Other inspections are initiated from complaints, accident reports or are programmed for hazardous areas, he said. Ms. Lewis, as L&I's Chief Electrical Inspector, discussed permits and inspections, noting there is an exemption for a property owner to do their own work without having a certified electrician. Further, there is

an exemption for regular employees working on the property of the employer – the situation confronting most maintenance personnel – but tempered it with the responsibility of the employer to provide sufficient training to ensure the worker's safety.

"No permit is required for replacement of "like with like" devices, but facility managers should procure an annual permit, logging all minor non-construction work for a monthly inspection," Ms. Lewis said. "All electrical work must be inspected before concealing in new construction. "Removal" inspections fall into a "gray area." Ms. Lewis encouraged inspection for safety's sake.

The Department of Ecology is a comprehensive environmental agency with jurisdiction in areas of air, water, contamination clean up and hazardous wastes. The department is the facility manager's place to turn for technical assistance, education and compliance. Tom Eaton touched on underground storage tanks, hazardous waste and materials, and spills.

"Take care in the selection of contractors for disposal of hazardous waste due to the "cradle to grave management" responsibility," Mr. Eaton said. "Facility managers should contact Ecology for help in finding ways to reduce hazardous waste and to utilize our other help desks to avoid unnecessary problems."

Ms. Combo, senior counsel in the Office of Attorney General, said her most often asked question from facility managers is "am I personally liable?" She urged everyone

to breathe a sigh of relief. Most situations would have the "employer" responsible, the state agency, school district, etc. Injured workers are covered by worker's compensation. A third party could institute a tort action but personal liability is still low as the state would defend a plant manager, and the state's liability account could pay any judgement. She tempered the above information with the fact that each case is a separate situation and other factors (neglect of duty, insubordination, indolence, willful violation of public policies or rules) could apply.

"The biggest problem is contractor compliance with the contract," said Ms. Combo. "Facility managers should speak up to the project managers if mechanical components in new construction projects aren't working like they should." There can be contractor or warranty related issues that can fix things, rather than "haunt you for the time you remain in the job," she said.

"If you are involved in the hiring of contractors, make your contracts clear, define the scope of work for accountability," Ms Combo said. "Then enforce the contract."

Ed Valbert, DSHS capital programs office, asked the question: Whose responsibility is it to halt work if workers are at risk on a job site? Ms. Combo's reply was that the site belongs to the contractor and therefore the responsibility for safety

Washington's Plant Managers Can Breathe Easier

Three out of four fire fatalities are caused by smoke inhalation. What are you doing to protect your facility and staff?

By Andrew Bull, Marketing Representative, Brookdale International Systems Inc.
Edited by Shop Talk staff

Fire in a building is every facility manager's nightmare. New advances in fire safety may have introduced new sprinklers, smoke detectors and alarm systems, but dangers associated with dense smoke still lurk, causing confusion, anxiety, disorientation and even death. Now, there is an innovative product available to address these concerns: the EVAC-U8® Emergency Escape Smoke Hood, manufactured by Brookdale International Systems Inc.

The system is widely accepted and deployed and being applied for varied functions, including fire safety and protection, emergency preparedness and evacuation planning. Key users in Washington State are Skagit County Jail staff and Green Hill School employees in Chehalis. The Alaska Marine Highway staff also purchased the system for emergency use.

"Personally, I'm sold on the equipment...they are great substitutes for more expensive self-contained units," said



Ray Moijtje, plant mechanic at Green Hill School, demonstrates the donning of the Emergency Escape Smoke Hood. Moijtje said the system would prove useful in emergency incidents. Photos by Bob MacKenzie

Don Louderback, safety officer for Green Hill School, Chehalis. "However, it's very important for facility staff to train on the units, so they are ready to use them and feel comfortable with the breathing resistance during an actual emergency."

Modern facilities with sprinklers do not adequately deal with smoke. Large volumes of deadly smoke can be generated even before a sprinkler head is activated. U.S companies wait an average of 19 minutes to call the fire department in a fire emergency, according to the Arkwright Mutual Insurance Company. In 19 minutes a facility can rapidly fill with smoke and toxic gases.

"Although the Emergency Escape Smoke Hood is primarily an escape unit, it can be used to help evacuate a building if need be," said Louderback. "A user could conceivably enter a smoke-



filled room or hall and check to ensure all residents have evacuated."

Fire safety experts have found EVAC-U8(pronounced evacuate) to be the smallest, most user-friendly and affordable solution to the problem of smoke inhalation. It combines a flame resistant, transparent hood made of Kapton(by Dupont - to protect the eyes, head and neck - and a technologically advanced filter which protects the respiratory system from smoke and toxic gases, including carbon monoxide (#1 killer in a fire). In addition, the system can filter: ammonia, chlorine, hydrogen chloride, hydrogen cyanide, pepper spray, tear gas, and sarin.

Facility and plant managers are concerned with the safety



and security of their tenants and employees, as well as the operations of their plant systems. Plant Operations Support members care about their staff welfare and for the potential liability faced if an agency is deemed "negligent." Many facilities now have multiple safety and security measures to protect staff. Managers will be well served to examine the unit as a possible addition to their list of safety and security measures.

For further information on the EVAC-U8(system, contact Mike Gardiner, Account Executive, Brookdale International Systems Inc., Unit 1 - 8755 Ash Street, Vancouver, BC, V6P 6T3, Canada, Tel: 1-800-459-3822 Fax: 1-604 324-3822 E-mail: gardiner@evac-u8.com, http://www.evac-u8.com

Repair system explored by WCC team



The 3M Finesse-It® plastic repair system is demonstrated on sheets of LEXAN® recently at the Washington Corrections Center in Shelton. Viewing the results are Demar Holtz (l), construction maintenance supervisor; Rhonda Roop, 3M sales representative; and Dan Waters, plumbing supervisor.

Norm Pocholke, plant manager 3 looks on. The repair system promises to save dollars previously used to replace whole sheets of LEXAN®. The WCC maintenance staff will put the system through a rigorous testing process and make the results available to the

consortium for possible statewide use. If the test phase is successful, GA's Office of State Procurement will try to place the repair products on a cost efficient term contract.
Photo by Bob MacKenzie

The Plant Operations Support Consortium

New members appear in green and renewing members are listed in gray type.
Welcome and thanks on behalf of the consortium!

| | | | |
|---|--|---|--|
| Universities/Colleges Cascadia/UW-Bothell Big Bend CC Clark College Edmonds CC Lower Columbia CC Spokane, Dist. 17 | Ports Port of Anacortes Port of Edmonds Port of Ephrata Port of Longview Port of Ridgefield Port of Sunnyside | Issaquah Ketchikan, Alaska Marysville Mukilteo North Thurston Oak Harbor Peninsula Renton Snohomish University Place | Washington State Agencies Corrections Ecology General Administration Health Information Services Labor & Industries Liquor Control Board Military Natural Resources Parks & Recreation Commission School for the Deaf Social & Health Services Transportation Veterans Affairs Washington State Patrol |
| Municipalities City of Tukwila Clark County Lewis County Pierce County Whatcom County | School Districts Anacortes Cascade Columbia-Burbank Enumclaw Federal Way | States Alaska Oregon | |

For name or address changes/corrections
Please send address label with corrections to:

Attention Karen Purtee
Shop Talk Mail List
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Olympia WA 98504-1012

List server subscribers pass 200 mark!

The Plant Operations Network List Server now boasts over 200 e-mail subscribers and program staff are ecstatic! The list server has become the most effective way to post immediate messages to the members of the consortium. Information is up to the minute and there are no mailing costs involved.

Facility folks ask questions, program staff send out announcements, and members offer interesting exchange items; from cold storage containers to surplus railroad ties.

If you aren't among the listed for e-mail announcements, check into the Plant Ops homepage, www.ga.wa.gov/plant/plantops.htm Click on the sixth point "Subscribe to the Plant Operations Network". Plug in your e-mail address. Click on the "submit request" box to send.

If you don't have access to the web but do have e-mail, send an e-mail to kpurtee@ga.wa.gov and ask to be added to the Plant Operations e-mail list server. No cost involved. Your organization need not be part of the Plant Operations Support program to share in this listing. (Bob will stipulate when materials or class offerings are limited to members only.) If you are not a member of the consortium and are wondering exactly what types of things are going on, this is your way to get a first hand look without cost.

Be among those that are in the know, this net is for you!



Sergeant Steve Garcia uses a forklift to deliver another load of rail ties to a National Guard truck. The load was destined for Port of Ephrata where the ties will be used to repair a railway.

National Guard “makes it happen” for consortium members

Members of A Company, 181 Support Battalion, Washington National Guard recently provided labor, forklift and heavy equipment transport for thousands of rail ties. The nine-foot rail ties were recycled from a defunct Burlington Northern Railway line as a component of the Heritage Park project in Olympia, near the State Capitol Campus. The Department of General Administration and recipient members realized “substantial savings” as a result of the construction site recycling. The Departments of Natural Resources and Corrections, Port of Ephrata, School for the Deaf, Military Department, Lewis and Thurston counties were happy to receive hundreds of rail ties, which will be used for construction and landscaping projects. The National Guard solders transported the bulk of the ties as a training mission. **Photos by Bob MacKenzie**



Proud members of A Company, 181st Support Battalion pause for a group photo during loading of rail ties near Capitol Lake in Olympia.

Building Commissioning Case Study

State Museum Shows Advantage of Bringing Professionals On Board Early in the Process

by Roger Wigfield, P.E.

There are a myriad of factors to consider when constructing a public building. Functionality, monumental design, and wise use of taxpayers’ dollars are important considerations. Energy efficiencies, energy life-cycle cost principles, resource conservation and maintainability must also be incorporated; not only to set the example, but to reflect budget economies in the future. Commissioning helps tie all of these together so the owner receives a building that functions as intended.

The decision to commission the Washington State History Museum turned out to be a true winning solution. The owner chose to integrate commissioning into this project because of the museum’s environmental requirements for strict control of temperature and humidity, and the complexity of the building. With this decision, the Washington State History Museum became one of the first major public buildings in the state to be commissioned during the construction process.

Larry Storset, of L.N. Storset and Associates, was hired as the commissioning agent and brought on board at the beginning of construction. At this stage, the design intent had already been established and the facility design was completed. The commissioning agent’s insights and previous professional experience with complex mechanical projects helped in developing appropriate building systems for the museum. During the commissioning process, a

number of problems were identified and corrected.

Water pumps: Two primary heating water pumps did not operate as specified. Several approaches were tried to get the pumps to operate per factory specifications, none of which worked. Finally the manufacturer was convinced to set up the pumps at the factory to evaluate their performance. The result was that the supplied pumps could not operate at their catalogued performance. The pumps were modified at the factory and reinstalled; the required performance was then achieved.

Boiler operation: Single boiler operation was satisfactory when building loads were low. However, as the heating requirement increased and both boilers were needed, one boiler would periodically trip out from low gas pressure. Investigation of the problem found that the gas regulator had inadequate capacity to meet peak load. The regulator was changed and full fire was achieved. Additional boiler deficiencies were also uncovered on the flame sensors; these were changed and proper boiler operation was achieved.

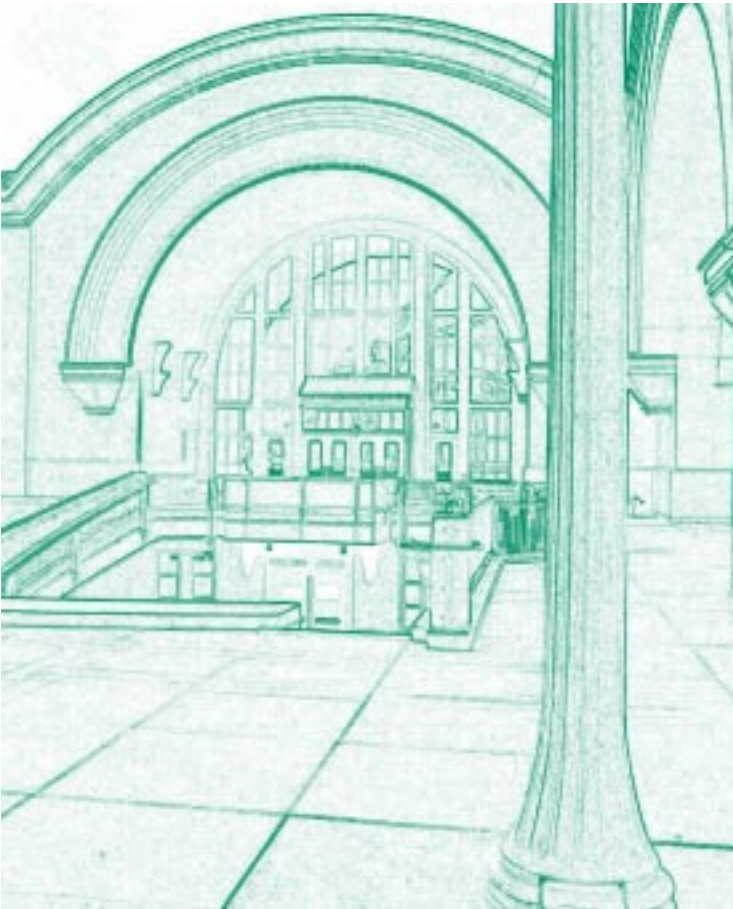
Chillers: It was found that starting up the chillers with a warm chilled water loop or during periods when the chiller demand was just slightly above that available from one chiller, would activate both chillers. The chillers would then proceed to unload with the second chiller shutting down about 15 minutes after it started. Because of the large mass of the building, it was found that the demand for the second chiller could be delayed for 60 minutes without impacting the building temperature and saving many chiller start/stop cycles.

Main Air Handling System: When return-air entered the mixing box ahead of the bag filters, it created a swirl condition that violently whipped the filters, threatening to eventually destroy them. Air flow and air pattern measurements were taken and perforated baffles were designed and installed to eliminate the air turbulence.

“The mechanical contractor was so pleased with the process that they now recommend it for other projects in which they are involved,” said Storset. “Commissioning delivered a building that operates as designed. ”

The primary reason the mechanical contractor recommended building commissioning is that it results in fewer customer callbacks to fix problems in the building. During the museum project, the commissioning process provided the building staff with good training and documentation.

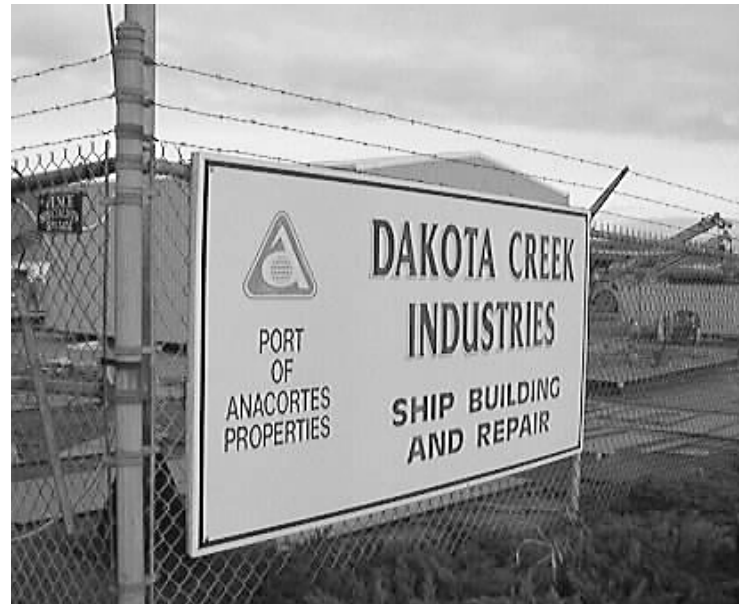
Please see **Building** , page 12



Washington State History Museum, Tacoma
Special effects photo by Bob MacKenzie

Port "up and running" with new automated system

Four Winds Group a winner following comprehensive screening, selection process



The Dakota Creek Industries site at the Port of Anacortes is reflective of the diverse customers served by maintenance staff.

Port of Anacortes facility maintenance professionals are implementing an automated maintenance management system, also called a Maintenance Planning System. The decision to proceed with an automated maintenance management system resulted in a comprehensive assessment, selection and implementation process. Port staff began by outlining the scope of the project through a *Project Charter*. Stakeholders who might be affected by the system were defined and included in the assessment process. These groups were asked to participate by clarifying what they wanted the system to do and not do and list the actual requirements they needed the system to perform. The Charter also defined the roles and responsibilities for the stakeholders, so a clear understanding was in place before the process moved to software selection.

A steering committee was created to keep the project on track and resolve any issues that arose. The committee also established business procedures for staff utilizing the system. After analyzing more than a dozen software applications, port staff chose

the **Maintenance Productivity Enhancement Tool (MPET)** available from the Four Winds Group, headquartered in San Diego. "Since we had no automated system prior to this and the manual system was very informal - basically handling each crisis as it developed - a large part of the implementation has been focused on setting up preventative maintenance tasks and defining procedures in the new system," said Bob Elser, port maintenance director. "When fully implemented, we expect to have work requests generated by any port staff."

The maintenance supervisor or lead technician will approve and schedule the work. The maintenance staff will meet periodically to review work order status and completion. Completed work orders will be posted as "history," along with all corrective work orders and emergency tasks.



The vintage ship, Marybell, undergoes repairs in drydock at the Dakota Creek Industries, a tenant of the Port of Anacortes. The Port also operates the Cap Sante Boat marina. The marina is home to 1,100 boats, nine businesses and provides 10,000 overnight moorage accommodations for visiting boats each year.

"We targeted January 1998 to be up and running with work requests coming from port directors and managers with the maintenance supervisor managing the schedule of work orders to be done," said Susan Herrick, port information systems analyst. "We are on track with our marina and airport director, as well as the projects and facilities department using the system, with the marine terminal department scheduled for training in April."



Susan Herrick, Port Information Systems Analyst

For more information on the Port of Anacortes assessment and implantation process, contact Susan Herrick on the Internet at Herrick@Fidalgo.Net or by voice (360) 299-1838.

Member Spotlight

Northern State Facility Team Adds Meaning to "Multi-Service"

A close-up of a "winning crew"

The Northern State Multi-Service Center (NSMSC) in Sedro-Woolley, near Bellingham is abuzz with activity. The once sleepy, 1912-era mental health campus is now truly "multi-service," and hosts: three state substance abuse treatment programs sponsored by DSHS, a federal Job Corps program, multi-county agencies (Housing Authority, Community Mental Health and the Regional Support Network), the Military Department, the Puget Sound Water Quality Action Team and Natural Resources tenants.

Today, more than 35 buildings are occupied and three more are being investigated for renovation possibilities. The Department of General Administration (GA) is charged with responsibility for the campus. Dan Singleton, acting facility manager, leads a crew of 12 journey and sub-journey level professionals at the center.

"Maintaining ancient or recently-remodeled facilities with multi-tenants here at NSMSC is certainly a challenge," said Singleton. "It helps that our crew is customer-oriented and proficient... we tend to help one another with our daily tasks."

GA is emphasizing two major facility-related initiatives. The first — asbestos abatement and demolition of unsalvageable buildings — will be completed within three years. It eliminates the last of the campus' asbestos hazards and creates new building sites with all utilities immediately

available. This abatement program has been undertaken in cooperation with the Department of Corrections Correctional Industries Program. By using inmate abatement/demolition crews, GA has saved over \$5 million to date and accelerated the program. The venture earned a 1997 Innovation Award honorary mention from the National Association of State Facilities Administrators.

The second major effort is repair and upgrade of campus infrastructure to support both current and future new tenants. The campus electrical loop upgrade was completed in early 1997, providing expansion capacity for new facilities and tenants. A major upgrade of water, storm water and sanitary sewer systems continues this biennium. In conjunction with a Job Corps project, GA is extending a new fiber-optic network across the campus to connect all buildings to a central fire alarm system and provide for increased computer access.

The facility professionals of NSMSC have just finished a central steamplant upgrade, replacing two 1955 vintage boilers with energy efficient units that will save \$50,000 per year in gas charges. A parallel energy project has upgraded all lighting to energy efficient units and has properly sized motors. An energy management system is being extended to all major buildings allowing automated control from the central steamplant. The \$790,000 energy project completely pays for itself through energy savings.

"We have to pursue every avenue available to maximize our limited staff and aged facilities," said John Wiggins, acting crew supervisor. "The efficiencies we've realized through the energy project will save us thousands of dollars and hundreds of hours in saved labor."



Robert Castilleja, carpenter at the Northern State Multi-Service Center, places the finishing touches on windows at the Center's steamplant. The windows were obtained through the Plant Operations Support consortium and were custom-made to retain the 1920's flavor of the plant. Photo by Duncan Crump

Following a Washington/Oregon settlement with a major manufacturer of windows, NSMSC received 80 new, custom-built window units at no cost. The Plant Operations Support consortium distributed the windows.

"The Plant Operations Support Network has contributed to both our energy efficiency and our facility upgrades at the center," said Duncan Crump, Assets Manager for GA's Division of Property

Development. "These and other program offerings assist us in maintaining the hectic pace of facility support at NSMSC."

NSMSC is also studying renovation of three historic campus buildings for prospective tenants. The 112,000 square foot Denny Building and the 13,000 square foot Trevennen Hall are both attracting interest from agencies supporting at-risk clients, the historic function on the campus. In addition, GA hopes to restore the beautiful 1917 Theatre building as a central meeting facility for all tenants and area government agencies for training and conferences.

A final project in initial stages is the design and construction planning for a new visitor center/security building for the campus. An innovative approach is being developed under which GA will provide design and materials and tenant units will provide actual site and building construction. This example of the growing teamwork between and among tenants and GA will be a showcase in which all NSMSC agencies can take pride. Scheduled for surplus/disposal as recently as 1991, the NSMSC campus is now "on the move" said Crump.

"The NSMSC staff is looking forward with pride to a bright future," said Singleton.

"Expanded treatment and training programs, blended with new construction and restoration are a great combination made possible by the performance of a winning crew."

Quest

(continued from page 1)

Laying the Foundation

The DSHS approach was to establish “baseline criteria” and an evaluation scoring process that would put candidate programs through their paces. Local needs requests and other system-specific questions were forwarded to the plant managers in the field, and their responses synthesized.

“I provided Mark and the assessment team what I knew were the critical elements of our preventive maintenance program here at Yakima Valley School,” said Lucke Eveland, Plant Manager 2.



Lucke Eveland

“I’m confident we’ll get a better, more useful product than if the team had not asked or considered our feedback.”

The next step was to bring the department’s plant and business managers in from the field in September 1997 for an all-day workshop in Olympia that would capture their collective experiences and recommendations, refine their needs and establish scoring criteria.

“We knew that plant managers

were the key to effective systems, so we asked them and their business managers to ‘hammer out’ what was needed,” said Crossen. “The session proved its worth by the number of ‘must haves,’ and ‘don’t needs’ identified by the maintenance and business professionals.”

Critical Elements Identified

The workshop provided the setting for the operators and business managers to identify what criteria would be used in the assessment process. Most had been seasoned by years of operating the FM-1 system and other programs and brought those experiences to the table.

The process provided staff the opportunity to “properly explain to users and executives what a system can and cannot do,” said Crossen. “We also identified what staff requirements would be needed for an effective system.”

The group quickly agreed the system would have to answer some common sense, operationally savvy questions like:

- Does it tell us where our resources are going?
- Is it simple?
- Does it schedule preventive maintenance?
- Then, the group agreed on more specific, tailored criteria including:
 - How does the candidate system mitigate risks?
 - What is the depth and

reputation of the CMMS vender?

“Was the company a \$50 million publicly traded, bluechip organization with a hefty client load, or a newly-created entity operating on a shoestring?” said Crossen. “We wanted to ensure any vender selected would have the resources to follow through with the system implementation.”

Finally, was the language and database engine proprietary or would it be “open” and compatible with other DSHS systems? Specifically, the system must be able to share information, to link recording, payroll and other functions in a common platform (DSHS uses a Microsoft Shared Sequel server). Crossen said the final criteria were “absolutely critical to the ultimate success of the system.”

- Is it user friendly?
- Does the system contain a minimum number of screens, with controls within screens?
- Does it take a minimum number of steps to get the job done?

Task force composition, objectives

Composition of a 14-person assessment task force reflects DSHS commitment to field a practical, full-functioning system. Twelve plant managers or their representatives and two personnel from the department’s information services section studied proposals and participated in the “live,” all-day evaluation

of finalists.

Some DSHS installations had developed their own maintenance tracking programs, such as the Paradox® system currently in use at Maple Hill School. Hollie Crawford is an automation maintenance system technician for both Maple Lane and Green Hill Schools. She served as the schools’ representative on the assessment task force. Crawford believes any system selected will predicate a “mind change” by facility staff.

“Any new program [the task force recommended] would have to be very impressive for the needed mind-change by all staff involved,” said Crawford. “The selected system will be very beneficial for its ‘history’ and options available, but it must be ‘friendly’ to the plant managers.”

There will be more information required in a uniform format, Crawford warns. “Campus staff will have to follow standardized formats for inputting their work requests,” she said.



Hollie Crawford

Shop Talk

Task force avoided “re-inventing the wheel”

The assessment task force had contacted the Plant Operations Support program to obtain as much feedback as possible to flesh out their evaluation. More than 85 responses were received by Crossen’s team via e-mail or by FAX from points as far as Queensland, Australia. “Many public facility managers admitted they had purchased two or even three programs within the past year or two,” said Crossen. “They had not comprehensively evaluated the vender, had not conducted an adequate needs assessment, or they had purchased a system that failed to perform as advertised by slick marketers.”

Crossen and the task force were determined to avoid “re-inventing the wheel,” and chose instead to study best practices and lesson learned from research provided by the Plant Operations Support program and other sources.

“Put the candidate systems to the test”

The final four candidate systems were put through a grueling all-day “live” exercise by the assessment team at Western State Hospital in Stellicoom. The team “set-up for business” in an old computer training room. Workstations were provided for all 14 members and a dedicated server installed for the hands-on component of the assessment.

Task force members were told “this is your shot,” said Crossen. “Pound these things

to death and flesh-out the good and bad points of each of the systems.”

The four finalist systems were: Four-Rivers’ TMS, Innovative Technologies’ SPAN-FM, JB Systems’ MainSaver, and Datastream’s MP2

Most vender presenters were not used to such a hands-on evaluation environment, Crossen said. Many had pre-packaged, multimedia shows to ‘explain and define their product.”



The recently-remodeled administration building at Maple Lane is a prime candidate for a new institution-wide automated facility management program.

Plant managers and information services staffers on the task force were able to evaluate if a program component was “user friendly.” They shared their hands-on experiences, discussed pros and cons, likes and dislikes.

“All presenters were totally exhausted when they were done,” said Crossen. “For that matter, so were the evaluators!”

The “live” assessment process

eliminated all but two contenders: Span-FM and DataStream. Requests for Proposals were forwarded to the final two contenders and were being reviewed at press time.

Implementation

The implementation strategy of the DSHS leadership is likewise based on experience and operational savvy. The selected vender will sign a performance contract. They will have 90 days to “get the

Hence, the task force found the “number one” success criteria for implementation was “having an accurate inventory and preventive maintenance schedule,” said Crossen. “Going from a paper-driven system to an electronic one is a huge investment, so the earlier we can get started, the better off we’ll be.” Unlike previous system fieldings, this time the process will be centrally located at the Lands and Building Division, DSHS headquarters in Olympia. User facilities will be connected to the central system by way of a departmental wide area access Intranet. The division staff had found it takes one FTE per site to properly maintain the system if operating independently. Centralization reduces the overall FTE requirements.

“Centralization will maximize information systems support at headquarters and focus our assets at one point,” said Director John Reynolds. “We simply can’t afford the FTEs required to support independent systems, and we have the technology at headquarters necessary to provide responsive support to the field.”

The staff of DSHS’s Lands and Building Division used the quality assessment process and convinced they have found an effective maintenance management system to support the tough challenges ahead. The real test will come in the months ahead, as plant managers aggressively tackle inventory, staff training and system familiarization – simultaneously!